

**CLAIMS:**

1. A method of fabricating a molecular electronic device, the method comprising:

fabricating a substrate having a plurality of banks defining wells for the deposition of molecular material; and

depositing into said wells a composition comprising a molecular electronic material dissolved in a solvent, using a droplet deposition technique, to fabricate said device;

wherein a said bank has a face, defining an edge of said well, at an angle to a base of the well of greater than a contact angle of said composition with said bank face; and

wherein a height of a said bank above a said base of a said well is less than  $2\mu\text{m}$ , and more preferably less than  $1.5\mu\text{m}$ .

2. A method as claimed in claim 1 wherein a height of a said bank above a said base of a said well is less than  $1\mu\text{m}$

3. A method of fabricating a molecular electronic device, the method comprising:

fabricating a substrate having a plurality of banks defining wells for the deposition of molecular material; and

depositing into said wells a composition comprising a molecular electronic material dissolved in a solvent, using a droplet deposition technique, to fabricate said device;

wherein a said bank has a face, defining an edge of said well, at an angle to a base of the well of greater than a contact angle of said composition with said bank face; and

wherein said method further comprises determining a number of droplets to deposit into a said well taking account of a tendency for said dissolved material to be drawn along a said bank face by surface wetting.

4. A method as claimed in claim 3 further comprising depositing at least one droplet of dissolved molecular electronic material such that on deposition it spreads to touch a said bank face.

5. A method as claimed in claim 3 or 4 wherein a height of a said bank above a said base of a said wall is less than  $2\mu\text{m}$ , and more preferably less than  $1.5\mu\text{m}$ .

6. A method as claimed in any one of claims 1 to 5 further comprising lithographically forming said banks from a photoresist.

7. A method of fabricating a molecular electronic device, the method comprising:

fabricating a substrate having a plurality of banks defining wells for the deposition of molecular material; and

depositing into said wells a composition comprising a molecular electronic material dissolved in a solvent, using a droplet deposition technique, to fabricate said device;

wherein a said bank has a face, defining an edge of said well, at an angle to a base of the well of greater than a contact angle of said composition with said bank face; and

wherein said method further comprises lithographically forming said banks from photoresist.

8. A method as claimed in claim 6 or 7 wherein said photoresist comprises a single layer of negative photoresist.

9. A method as claimed in any preceding claim wherein a said bank face angle is at least 40 degrees.

10. A method as claimed in any preceding claim wherein a said bank face is undercut.

11. A method as claimed in any preceding claim wherein said depositing comprises depositing droplets which, on deposition, incompletely fill a said well in a lateral plane of said substrate

12. A substrate for a molecular electronic device, the substrate having a plurality of banks defining wells for the deposition of molecular electronic material, wherein a said bank has a face, defining an edge of said well, at an angle to a base of the well of greater than 40 degrees, and wherein said bank is lithographically formed from photoresist.

13. A substrate as claimed in claim 12 wherein a height of a said bank above a base of a said well is less than  $2\mu\text{m}$ , and more preferably less than  $1.5\mu\text{m}$ .

14. A substrate for a molecular electronic device, the substrate having a plurality of banks defining wells for the deposition of molecular electronic material, wherein a said bank has a face, defining an edge of a said well, at an angle to a base of said well, of greater than 30 degrees, and wherein a height of said bank above a said base of said well is less than  $2\mu\text{m}$ , and more preferably less than  $1.5\mu\text{m}$ .

15. A substrate as claimed in claim 14 wherein said bank is lithographically formed from photoresist.

16. A substrate as claimed in claim 12, 13 or 15 wherein said photoresist comprises a single layer of preferably negative photoresist.

17. A substrate as claimed in any one of claims 12 to 16 wherein a said bank face angle is greater than 40 degrees.

18. A substrate as claimed in any one of claims 12 to 16 wherein a said bank face angle is undercut.

19. A molecular electronic device including the substrate of any one of claims

12 to 18.

20. A substrate, method or device as claimed in any preceding claim wherein said molecular electronic device comprises an organic light emitting diode device.

21. A method of fabricating a molecular electronic device, the method comprising:

fabricating a substrate having a plurality of banks defining wells for the deposition of molecular material; and

depositing into said wells a composition comprising a molecular electronic material dissolved in a solvent, using a droplet deposition technique, to fabricate said device;

wherein a said bank has a face, defining an edge of said well, at an angle to a base of the well of greater than a contact angle of said composition with said bank face; and

wherein said method further comprises depositing droplets of dissolved molecular electronic material into a said well such that they incompletely cover the base of the well and are spread to cover the base of the well by capillary action.

22. A method of fabricating a molecular electronic device, the method comprising:

fabricating a substrate having a plurality of banks defining wells for the deposition of molecular material, a said well having a well base area and a well perimeter, a said bank having a face, defining an edge of a said well, at an angle to a base of the well; and

depositing molecular electronic material into said wells, dissolved in a solvent, using a droplet deposition technique, to fabricate said device;

wherein said bank angle and a ratio of said well perimeter to said well base area are selected such that a droplet deposited on or adjacent a said well edge is spread by wicking along said well edge.

23. A method as claimed in claim 22 wherein deposition into a corner of a said well occurs by wicking.